No. 721,095. PATENTED FEB. 17, 1903.

W. H. SANDERS.

CAR COUPLING.

APPLICATION FILED AUG. 28, 1902.

NO MODEL.

FIG. 1.

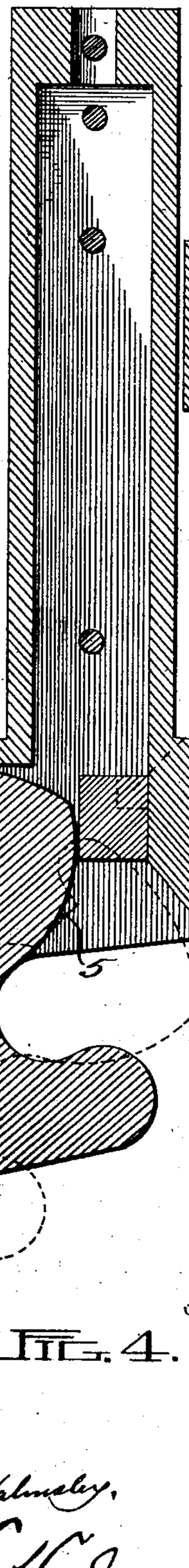

FIG. 3.

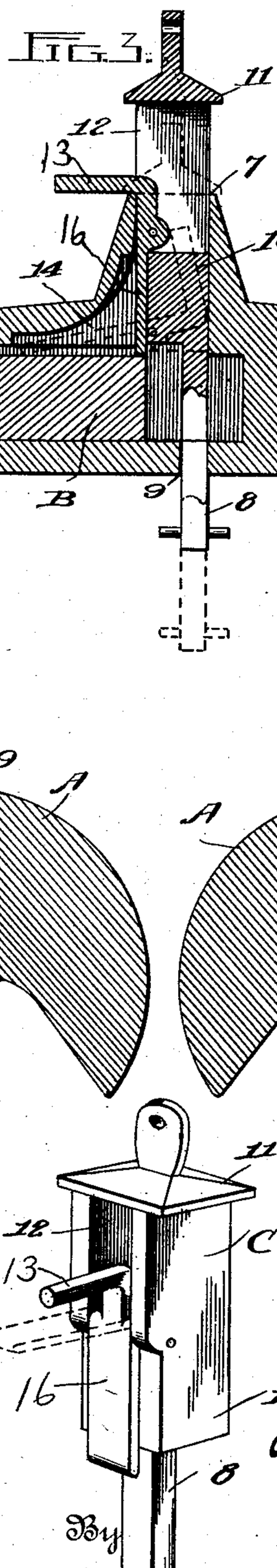

FIG. 2.

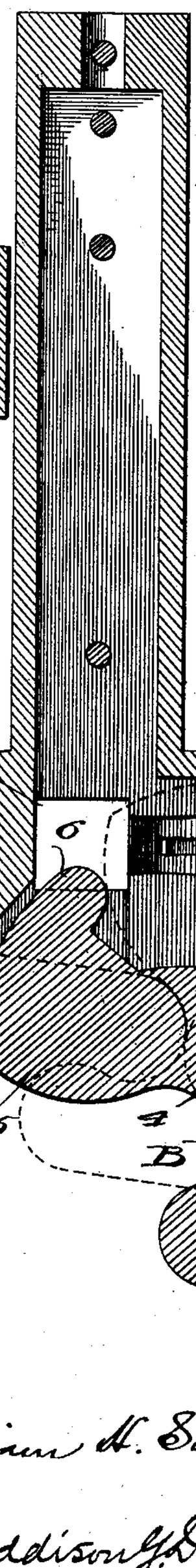

FIG. 4.

Witnesses

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WILLIAM H. SANDERS, OF SUSQUEHANNA, PENNSYLVANIA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 721,095, dated February 17, 1903.

Application filed August 28, 1902. Serial No. 121,325. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. SANDERS, a citizen of the United States, and a resident of Susquehanna, in the county of Susquehanna and State of Pennsylvania, have invented a new and useful Improvement in Car-Couplers, of which the following is a specification.

My invention relates to an improvement in car-couplers; and a primary object is to provide a coupling of such construction that when the pin is once raised to uncouple it will be unnecessary to continue to hold it up or the lever which operates it, as it will automatically lock itself until tripped by hand or another coupling is effected.

Another object is to provide a knuckle of such construction that its tail will be struck when two cars come together to cause a coupling without coming in contact with the guard-arm or front walls of the coupling until closed, as distinguished from most couplers now in use, in which the knuckle strikes the guard-arm first and then follows it around into the coupling and in that way often gets caught at the junction of the guard-arm and the front wall and either damages the coupler or fails to couple.

Still another object is to provide a knuckle of such construction that it will not pull out if at any time the knuckle-pin should break, and to this end the tongue is so shaped and the inner wall of the coupler so thickened where it comes in contact with the tongue that it will not allow the knuckle to pull out while it is locked.

Finally, it is an object to provide a strong coupler which will absolutely insure coupling every time and at the same time one which will not accidentally lock during switching, when it is not intended or desired to have it locked.

With these several objects in view my invention consists in certain novel features of construction and combinations of parts, which will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a plan view, in horizontal section, with the pin removed. Fig. 2 is a bottom plan view in horizontal section. Fig. 3 is a transverse sectional view; and Fig. 4 is a view in perspective of the pin for locking the knuckle, showing the pivoted trip in its normal position.

A represents a draw-head of the "Janney" type on the Master Car-Builders' lines, and it is constructed with the usual central cavity 1, the side wall of which is recessed at 2 and thickened at 3 for a purpose which will be hereinafter mentioned.

B is a knuckle hinged at 4 in the usual manner to the draw-head. The knuckle has the general construction of other knuckles of couplers of this type, except that the tail of the knuckle is larger than any other now in use in order to insure its coupling every time. This enlargement is on the outer surface, which is convex, as at 5, and which is abutted by the other coupler in effecting a coupling. On the opposite edge of the tail a rearwardly-projecting tongue 6 is formed in position to enter the recess or cavity 2 in rear of the thickened portion 3 of the wall of the draw-head, whereby to prevent the knuckle from pulling out if at any time the knuckle-pin should break.

C is the locking-pin. This is square in cross-section at its upper end to fit a square opening 7 in the top of the draw-head, whereby it is permitted to slide up and down freely, but prevented from turning. A shank 8, which forms a downward continuation of the pin at one corner, is also square in cross-section and fitted to a hole 9 in the bottom of the draw-head in which it slides. An intermediate portion 10 is slightly narrower than the extreme upper end and just fits and fills the space intervening between the inner wall of the draw-head and the nearest point of the tail of the knuckle when the knuckle is closed, thus locking the latter. The extreme upper end of the pin has an overhanging flange 11, which closes the opening 7 in the top of the draw-head, forming a cover therefor when the pin is down, thus preventing the ingress of cinders, ice, snow, or other objectionable material. An orifice 12 is formed transversely in the upper end of the pin, and a trip or latch 16, of inverted-L shape, is pivoted near its center within this orifice near the lower end thereof and at one edge, so that the trip normally hangs down vertically by gravity in the reduced area of the intermediate

portion of the pin, its object being to rest upon the tail of the knuckle when the pin is in raised position preparatory to uncoupling, so that the pin is held out of the path of the tail of the knuckle, which is permitted to swing freely when the cars are drawn apart, thus avoiding the necessity of holding the pin up until draft is applied, which is generally the case in other couplings. The size and shape of the tailpiece and tongue are such that they never pass from beneath the lower end of the coupling-pin in the uncoupling of the cars, so that after two cars are uncoupled they are always in position to again couple, and consequently the pin only has to be raised preparatory to uncoupling, and should the pin be raised and it should be desired to again lock the knuckle without uncoupling this may be done by simply lifting the protruding handle end 13 of the trip. When a coupling takes place, the trip is swept aside by the tongue, its lower end entering an enlargement 14, formed for it in the roof of the draw-head, and the handle end 13 receding into the orifice 12 in the locking-pin.

From the foregoing it will be seen that a strong lock is formed, because the pin just fills the space between the tail of the knuckle and the adjacent wall of the draw-head, where the parts are thick and strong. This, however, is merely incidental to the main features, which have hitherto been recited and do not require repetition. It will be understood, of course, that every part of my improved coupling is automatic—that is to say, after the locking-pin is once raised from its locked position. The trip drops by gravity to a position to rest upon the tail of the knuckle when the pin is raised and then lowered. This trip is automatically brushed aside by the tailpiece in the operation of coupling and the locking-pin drops by gravity into a position to lock the knuckle. All of this takes place with precision as often as there is occasion for the parts to operate.

One other point may be mentioned, and that is that the weight of the locking-pin is such that it keeps the knuckle open when once uncoupled, and jars incidental to switching will not cause it to close, which is a fault of many couplers now in use, as the punishment and rough handling to which a car is subjected are very liable to cause the coupling to accidentally close and lock and in that way make it necessary to uncouple it again by hand preparatory to the coupling of cars. In my invention I guard against this difficulty, and this while primarily due to the weight of the locking-pin resting upon the tailpiece results partly perhaps from the fact that a larger area must be traversed before the knuckle is closed and due to the larger area of the lower end of the pin engaging the tailpiece, which thus increases the frictional contact between the two.

It is evident that slight changes might be made in the form and arrangement of the several parts described without departing from the spirit and scope of my invention, and hence I do not wish to limit myself to the exact construction herein set forth; but,

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a car-coupling, the combination with a draw-head and a knuckle pivoted therein, of a locking-pin having sliding connection with the draw-head, the pin provided with a shank at its lower end of reduced size so that the major portion of the transverse area of the pin will rest upon the tailpiece of the knuckle when the latter is in uncoupled position and the weight of the pin thereon prevents the accidental locking of the knuckle, the pin provided with an orifice, a trip pivotally secured in the orifice, the lower end of the trip adapted to rest upon the tailpiece of the knuckle when the latter is in uncoupled position, the upper end of the trip extending some distance outside the orifice and above the draw-head, the draw-head provided with a recess for the reception of the lower end of the trip when the knuckle is in locked position, the upper end of the trip adapted to be received within the orifice.

2. In a car-coupling, the combination with a draw-head, one wall of the draw-head having an interior recess formed therein, a thickened portion adjoining the recessed portion, a knuckle pivoted in the draw-head, the knuckle provided with a thickened tailpiece, the tailpiece having a rearwardly-extending tongue formed thereon, the tongue received within the recess when the knuckle is in closed position, a locking-pin having sliding connection with the draw-head, the locking-pin provided with an orifice near its upper end, a trip pivoted in the orifice, the lower end thereof adapted to rest upon the tailpiece when the pin is in raised position to retain the pin in raised position, the upper end of the trip extending outside the plane of the pin to afford a means for releasing the trip and permitting the pin to assume its lowered position.

3. In a car-coupling, the combination with a draw-head and a knuckle pivoted therein, of a locking-pin having sliding connection with the draw-head, the pin provided with an orifice therein, a trip pivoted within the orifice, the pin below the orifice being recessed or cut away, the lower portion of the trip received in the recessed portion of the pin, and adapted to rest upon the tailpiece when the knuckle is in uncoupled position and the pin is raised the upper end of the trip adapted to extend outside of the orifice in the pin and project some distance laterally of the pin.

4. In a car-coupling, the combination with a draw-head and a knuckle pivoted therein, of a locking-pin having sliding connection with the draw-head, the pin provided with an orifice therein, a trip pivoted within the orifice, that portion of the trip located above

its pivotal point projecting some distance beyond the outer wall or face of the pin and at right angles thereto, the pin below the orifice being recessed or cut away, the lower portion of the trip received in the recessed portion of the pin, and adapted to rest upon the tail-piece when the knuckle is in uncoupled position and the pin is raised the upper end of the trip adapted to extend outside of the orifice in the pin and project some distance laterally of the pin.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

WILLIAM H. SANDERS.

Witnesses:
B. T. GLIDDEN,
CHAS. SABIN.